

Using Random Assignment to Test “Nudge” Messaging on SNAP Applications

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The Promises and Challenges of Administrative Data in Social Policy Research

U.S. DHHS, ACF, Office of Planning, Research and Evaluation

Washington, DC

October 2015

Context

Background

- ~40,000 New York City residents apply for Supplemental Nutrition Assistance Program (SNAP) per month; most (~70%) apply on-line.
- In 2015, HRA launched a redesigned online application. Redesign goals included improving the user interface:
 - More user-friendly.
 - *Improve applicant experience.*
 - Encourages complete and accurate reporting.
 - *Increase efficiency and accuracy of benefit determination process.*
- **Question:** *Could behavioral “nudges” be used to support these goals—low-cost approach to encouraging complete and accurate reporting without client burden?*

The Literature

- Insights from behavioral economics pointed to principles that could be used to encourage complete/honest reporting:
 - Remind applicants of their ethical beliefs.
 - Tell applicants what their peers are doing.
 - Emphasize the impact of honesty.
- Approach increasingly used to improve outcomes in areas such as retirement savings, health care, and tax collection.
- Impacts generally small in magnitude, but meaningful in the context of high volume and low intervention cost.
- Literature highlights the importance of testing messages to identify what works.

Intervention

- Web redesign provided a non-disruptive mechanism for **testing** messages. HRA developed **4 messages to be randomly displayed** to applicants above an attestation statement:
 - “All of the information I will provide on this application is accurate and complete. *If you agree with this statement, check the box.*”
- Intervention development and implementation required collaboration across multiple HRA departments:
 - Office of Business Process Innovation
 - Investigation, Revenue and Enforcement Administration
 - Family Independence Administration
- Internal evaluation by HRA Office of Evaluation and Research relying on **existing administrative data systems**.

Study Design

Human Subjects Protection

- Random assignment proposals are subject to intense agency scrutiny to ensure ethical treatment of applicants and clients.
 - Review by agency leadership, Office of Evaluation and Research, and other relevant departments determined *benefit was significant* and *no risk* of denied benefits.
 - Internal evaluation so client confidentiality/data sharing issues not raised.
 - Applicants not asked to provide any additional data for study purposes. *Study relies exclusively on administrative data.*
- ❖ **Key Fact:** *SNAP eligibility and benefits would not be affected or withheld based on responses to randomly-assigned messages.*

Measuring Impact

Outcome Measure	Administrative Data System
Web-based attestation check box <i>checked?</i>	Paperless Office System (POS)
Key income and household composition information as entered on web-based application* - <i>More</i> as a proxy for more complete/accurate	POS
Interview completion	POS
Key income and household composition information at interview (for subgroup with interview completed) - <i>Change</i> as a proxy for less complete/accurate	POS
Application outcome	Welfare Management System (WMS)

Timeline

Month	Milestone
April 2015	Redesigned application launched with random assignment of “nudge” messages to all web-based applicants
May 2015	SNAP application sample generated
June 2015	SNAP application process completed for sample
July 2015	Dataset pulled by MIS
August 2015	Initial analyses completed

Initial Study Findings

Sample

- **23,221** web-based SNAP applications
 - Submissions during a 4-week period after launch (4/9/2015 – 5/6/2015)
 - Excluded 2% with no interview “outcome” (kept or fail) by June 31, 2015.
 - 44.7% submitted at HRA SNAP Center PC banks; 55.3% submitted at other locations (e.g., home, library).
 - Randomly assigned into 5 groups of ~4,600.

Message Groups

Appeals to...	Message
M1. Social Norms (Informal guide re: 'appropriate' response; dispel mistaken perceptions of requirements)	<i>Did you know?</i> Nearly 9 out of 10 New York City households who receive SNAP benefits have some form of income. Please report your complete information to ensure we process your application correctly and get you the benefits you need.
M2. Honesty (Personal impact – “ <i>positive</i> ” frame)	Providing complete information now will help avoid delays in processing your application.
M3. Honesty (Personal impact – “ <i>negative</i> ” frame)	<i>Did you know?</i> The NYC Human Resources Administration uses outside data sources to verify your information and protect you and other applicants from benefit fraud, so please make sure your information is accurate.
M4. Honesty (Global → <i>altruism</i>)	The quicker we can verify your information, the more time we can spend on getting other New Yorkers the benefits they need, so please provide as much information as you can.

Table 1. Information Submitted on Web-based Application

	Control (n=4,671)	Treatment <i>combined</i> (n=18,550)	M1 (n=4505)	M2 (n=4738)	M3 (n=4681)	M4 (n=4626)
Attestation checked	92.9%	92.0%**	91.0%**	92.5%	91.9%*	92.6%
Wages (>\$0)	44.6%	44.0%	43.3%	44.2%	44.0%	44.4%
- if >\$0, \$ (average)	\$1,261	\$1,260	\$1,198	\$1,288	\$1,233	\$1,240
Adults entered (other than case head)	31.0%	32.2%	32.7%*	31.6%	32.4%	31.9%
- if >1, # of adults	2.2 adults	2.2 adults	2.2	2.3	2.2	2.2
Children entered	49.6%	48.9%	48.8%	50.0%	49.2%	49.0%
- if >0, # of children	1.7 children	1.7 children	1.7	1.7	1.7	1.7

* p < .1 ** p < .05 *** p < .01

→ Small but significant *negative* impact on **attestation** (*Social Norms; Honesty-personal/negative*).

→ Small *positive* impact on **reporting of adults** (*Social norms*).

Table 2. Information at Interview

	Control	Treatment <i>combined</i>	M1	M2	M3	M4
Interview kept	82.7%	82.8%	82.4%	83.1%	82.6%	83.0%
<i>Among applications with interview kept...</i>						
	(n=3,863)	(n=15,355)	(n=3711)	(n=3939)	(n=3867)	(n=3838)
↑ in Wages	72.8%	73.5%	74.7%	73.0%	72.3%	73.9%
↑ in Adults	15.7%	15.6%	15.1%	15.5%	15.5%	16.3%
↑ in Children	5.5%	5.2%	4.7%	5.2%	5.2%	5.5%

→ No significant differences by message. *(Also conducted separate analyses among those who entered at least some wages on web-based application– and among those who did not – but again no impact found.)*

Table 3. SNAP Application Outcomes

	Control (n=4,671)	Treatment <i>combined</i> (n=18,550)	M1 (n=4505)	M2 (n=4738)	M3 (n=4681)	M4 (n=4626)
Emergency SNAP Granted	8.5%	8.4%	8.0%	8.6%	8.7%	8.3%
Recurrent SNAP Granted	32.4%	33.1%	32.3%	33.2%	33.6%	33.2%

Note: Analysis of “Recurrent SNAP Granted” excludes 0.6% not yet determined by mid-July 2015.

→ No significant differences in application outcomes by message.

Table 4. Applications *not* Submitted at HRA SNAP Center PC Bank

	Control (n=2,644)	Treatment combined (n=10,204)	M1 (n=2496)	M2 (n=2610)	M3 (n=2588)	M4 (n=2510)
<i>Information submitted on web-based application...</i>						
Attestation checked	92.9%	92.2%	90.8%***	93.1%	92.3%	92.4%
Wages (>\$0)	47.5%	46.1%	45.0%	45.6%	46.7%	47.1%
- if >\$0, \$ (average)	\$1,294	\$1,330	\$1,300	\$1,366*	\$1,336	\$1,315
Adults entered (other than case head)	30.2%	31.8%	32.6%*	30.6%	32.2%	32.0%
<i>Among applications with interview kept...</i>						
↑ in Wages	70.1%	71.6%	73.3%	71.6%	69.8%	71.6%
Web app: >\$0	41.6%	43.1%	45.6%*	42.0%	40.7%	44.1%

* p < .1 ** p < .05 *** p < .01

- Small *negative* impact on: **attestation** and **increased wages at interview** (*Social norms*).
- Small *positive* impacts on: **wage amount submission** (*Honesty-personal/positive*), **reporting of adults** (*Social norms*).

Lessons Learned

Administrative Data

- **Advantages:**

- No study-specific data collection needed.
- Data are complete (no response biases) and timely (collected as application is submitted/processed).

- **Challenges:**

- Data not readily accessible (with exception of application *outcomes*); system not designed for easy ad hoc queries/reporting.
- Extensive data management needed to convert extracted data into a dataset for analysis.
- Consultation needed among evaluation, program, and MIS staff to define fields (e.g., map back-end variables to front-end application questions) and identify the most appropriate fields for analysis.

Messages

- Three of four messages had some impact on at least one outcome, although magnitude of impact small and sometimes in opposite direction from desired effect.
 - M3 (Honesty-personal/neg) not associated with greater reporting of any key variables, but less likely to check attestation. Negative impact on attestation also seen with M1 (Social Norms) → *Related to length of message?*
 - M1 (Social Norms) associated with reporting of more adults but also with greater increase in reported wages at interview (as compared to web-based submission), among those reporting any income at submission.
 - M2 (Honesty-personal/pos) associated with reporting of more wages among those reporting any income – but only for applicants outside of HRA SNAP Centers.
- Some differences in impact for applicants outside HRA sites vs. at HRA SNAP Centers → *Related to differences in population?*

Next Steps

- Further analysis:
 - Explore different sources of income (e.g., self-employment, unearned income types); other variables?
 - Longer (different) time period
 - Differences in sub-populations (language, location)
 - Analyze web-based re-certifications
- Further efforts:
 - New messages → Results suggest that messages can have an impact, but don't provide clear guidance on the "right" message.
 - Different message placement (e.g., on page with relevant question; at application end)

* **Opportunity** = Next web release!

For more information

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